

इंटरनेट

मानक

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Mazdoor Kisan Shakti Sangathan

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IS 4614 (1988): Hurdles [PCD 22: Sports Goods]



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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*  
**SPECIFICATION FOR HURDLES**  
*( First Revision )*

**1. Scope** — This standard prescribes requirements and test for hurdles for men's and women's events.

**2. Materials**

**2.1 Framework**

**2.1.1 Uprights** — Metal or any other suitable material.

**2.1.2 Base members** — Mild steel channels, angles or tubes.

**2.1.3 Counterweights** — Metal or any other suitable material.

**2.1.4 Cross-bars** — Metal or any other suitable material.

**2.2 Top Bar** — Seasoned wood or any other suitable material. The wood shall be seasoned to a moisture content not exceeding 14 percent. It shall preferably be straight grained and shall be free from sapwood, knots, cracks, shakes, splits, borer holes, warp and other defects which are likely to reduce the life of top bar or affect its utility. The recommended species of timber are:

TRADE NAME	BOTANICAL NAME
aini	<i>Artocarpus hirsuta</i> Lamk.
ash	<i>Fraxinus</i> sp.
benteak	<i>Lagerstroemia lanceolata</i> Wall.
chaplash	<i>Artocarpus chaplash</i> Roxb.
deodar	<i>Cedrus deodra</i> Loudon.
dhaman	<i>Grewia tillaefolia</i> Vahl.
kail	<i>Pinus wallichiana</i> A.B. Jacks.
kokko	<i>Albizia lebbek</i>
laurel	<i>Terminalia alata</i>
sissoo	<i>Dalbergia sissoo</i> Roxb.
teak	<i>Tectong grandis</i>
white cedar	<i>Dysoxylum malabaricum</i>

**3. Shape and Dimensions** — Typical shape of the hurdles is shown in Fig. 1. The dimensions of the hurdles for men's and women's events shall conform to those given in Table 1 and Fig. 1.

**4. Mass** — The mass of the hurdles shall be as given in Table 1.

**5. Manufacture, Workmanship and Finish**

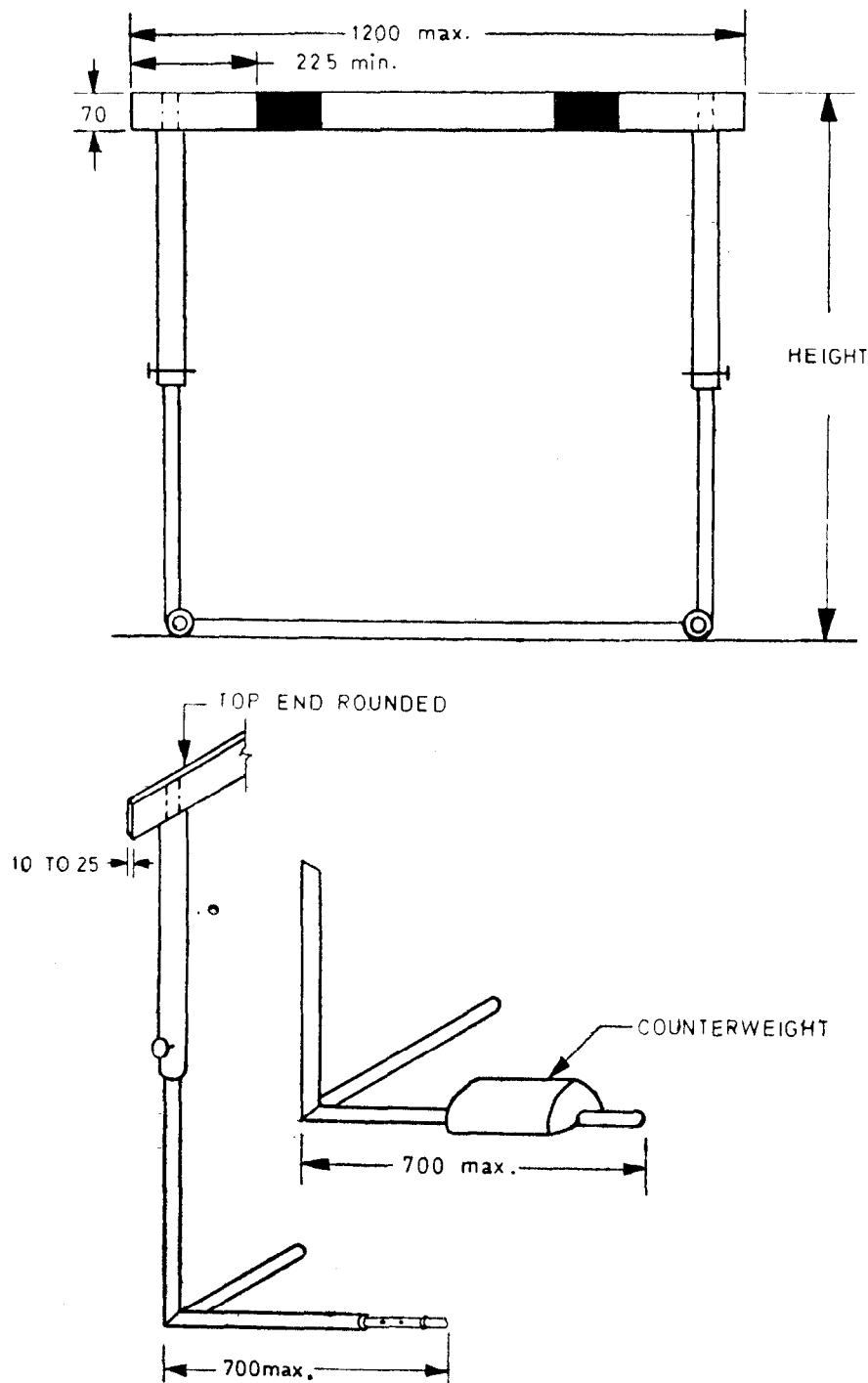
**5.1** The framework of the hurdle shall consist of two bases and two uprights supporting a rectangular frame, reinforced by one or more cross-bars, the uprights to be fixed at the extreme end of each base.

**5.2** The extreme ends of the uprights shall be flattened to a reasonable length to receive the wooden top bar which shall be fixed to the uprights by means of nuts and bolts. The bolts shall have a domed head which shall be countersunk in the top bar so as to be in level with the face of the bar. Further, it shall face the direction of running when the hurdle is placed in the field.

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All dimensions in millimetres.  
FIG. 1 HURDLE, TYPICAL

TABLE 1 REQUIREMENTS FOR HURDLES  
(Clauses 3 and 4)

Sl No.	Requirement	For Men	For Women
(1)	(2)	(3)	(4)
i)	Mass, kg, <i>Min</i>	10	10
ii)	Height, mm	1 067 ± 3 ( for 110-m event ) 914 ± 3 ( for 400-m event )	840 ± 3 ( for 100-m event ) 762 ± 3 ( for 400-m event )
iii)	Width, mm, <i>Max</i>	1 200	1 200
iv)	Length of base, mm, <i>Max</i>	700	700
v)	Top bar:		
a)	Width, mm	70	70
b)	Thickness, mm	10 to 25	10 to 25

**5.3** The hurdle shall be of such a design that a force of at least 3.6 kgf applied to the centre of the top edge bar shall be required to overturn it.

**5.4** The hurdle may be made adjustable in height for each event. In any setting, the top bar shall lie in the same horizontal plane and the two uprights shall be free from excessive play. The counterweights shall be adjustable so that at each height, a force of at least 3.6 kgf and not more than 4.0 kgf is required to overturn it. Further, means shall be provided for locking the counterweights in position so that they do not get displaced easily when the hurdle is disturbed.

**5.5** The top bar shall be painted in black and white stripes or in some other contrasting colours in such a manner that the lighter stripes appear at the ends of the top bar and these shall be at least 225 mm in width. The hurdles shall be so placed on the track that the base members of the hurdles are on the side of the approach of athletes.

**5.6** All edges shall be rounded.

**6. Stability Test** — To check the resisting force of the hurdles, a simple spring-balance shall be used by the application of pulling force to the centre of the top bar. Alternatively, a cord with hook shall be applied to the centre of the top bar and the cord taken along over a pulley fixed conveniently and the other end of the cord loaded by adding required weights.

**7. Marking** — Each hurdle shall carry the manufacturer's name, initials or recognized trade-mark.

**7.1 Standard Marking** — Details available with the Bureau of Indian Standards.

**8. Packing** — The hurdles shall be packed as agreed to between the purchaser and the supplier.

**9. Sampling** — Unless otherwise agreed to between the purchaser and the supplier, the sampling procedure given in IS : 2500 ( Part 1 )-1973 'Sampling inspection tables: Part 1 Inspection by attributes and by count of defects ( *first revision* )' shall be followed, with the definition of lot, type of plan, inspection level and acceptable quality level as given in 9.1 and 9.2.

**9.1 Lot** — In any consignment, all hurdles of the same size and manufactured from identical materials under similar conditions shall be grouped together to constitute a lot.

**9.2** For all the requirements given in this specification, a single sampling plan with Inspection Level IV and Acceptable Quality Level 1.5 percent shall be followed.

## EXPLANATORY NOTE

This standard was first issued in 1968. This revision is brought out mainly to align the standard with the latest rules of the International Amateur Athletic Federation, as desired by the Consultative Committee of Parliament for the Department of Youth Affairs and Sports. In this revision, the requirements for the height of the hurdles and for the painting of the top bar have been modified besides incorporating certain other modifications.